



# One CGIAR Global Webinar Series

“Genome Editing in Agriculture: Innovations for Sustainable Production and Food Systems”



The CGIAR is going through a dynamic reformulation that advances integration of its partnerships, knowledge, assets, and global presence to transform progress in key areas where innovation is needed to deliver on the Sustainable Development Goals by 2030. Moving forward, the One CGIAR<sup>1</sup> will implement a phased approach to research delivery with the imperative of seeking multiple benefits across CGIAR’s impact areas, co-creation with partners, and enhanced performance for effectively responding to the food security and related human welfare as well as climatic challenges.

The Crops to End Hunger<sup>2</sup> initiative seeks to “accelerate and modernize the development, delivery and widescale use of a steady stream of new crop varieties developed to meet the food, nutrition and income needs of producers and consumers, respond to market demand and provide resilience to pests, diseases and new environmental challenges arising from climate change.” The CGIAR’s Excellence in Breeding Platform<sup>3</sup> will leverage “innovations in the public and private sector to provide access to cutting-edge tools, services and best practices” needed to modernize plant breeding across the CGIAR and national breeding programs to develop

more resilient, productive and nutritious crop varieties in the developing world.

Both Crops to End Hunger and the Excellence in Breeding Platform emphasize the critical need to modernize plant breeding programs if we are to realize the productivity, nutritional and sustainability potential of agriculture and food systems in developing countries. Doing so requires transformative strategies, including integration of cutting-edge, advanced breeding tools and technologies that can be used to tackle seemingly intractable problems that have eluded conventional plant breeding approaches to date. The application of a suite of new plant breeding techniques, particularly genome editing<sup>4</sup>, is advancing trait gains in both commodity and high-value horticultural crops, largely driven by private sector investment and innovation. Accessing and applying genome editing tools in CGIAR plant breeding programs has the potential to accelerate delivery of key targets for abiotic and biotic stress tolerances, nutritional improvements, and quality traits designed to meet evolving market demands, with benefits accruing to farmers, value-chain actors, and consumers.

The One CGIAR reform coupled with the forecasted impacts of the Covid-19 pandemic on global food security have highlighted the need for science-based deliberations on the use of genome editing to accelerate crop improvement within CGIAR research programs. Several CGIAR institutions are already working on applications of genome editing in plants (and also in animals). Developments are advancing at a rapid pace and many countries are in the process of considering how to best realize the contributions that gene editing can make to improving agriculture and food systems, with particular attention to how genome edited products may or may not be regulated. This has similarly been a topic of discussion by CGIAR institutions, and efforts have been undertaken to advance a fit-for-purpose CGIAR policy.

To advance these efforts, a webinar series is planned that will bring CGIAR centers and partners together

with policy makers, academics, innovators and other stakeholders to take stock of current research and applications of genome editing within CGIAR, and address related topics that will impact the enabling environment needed to translate research into practice, raising the profile of the genome editing discussions among CGIAR and its partners (see Annex I for a provisional outline). Learnings from the webinar series will be used to develop a white paper/policy document that will describe a One CGIAR approach to delivering on the promise of genome editing for agriculture. The draft policy document will be the focus of a round-table dialogue with CGIAR leadership with the objective of formalizing a policy/position statement for sharing across the CGIAR and its partners through a series of regional workshops, and the launch of a One CGIAR Community of Practice (CoP) for Genome Editing in Agriculture with the goal of developing and sharing best practices, guidelines, and strategies for research, development, and deployment of genome edited agricultural products.

The webinar series will cover a number of timely topics, including:

**Applications of genome editing for crop and livestock improvement across CGIAR:** An overview of the ongoing work in various CGIAR centers providing context for and examples of agricultural applications of the technology in plant and animal agriculture.

**Regulation of genome edited plants and animals:** Exploring considerations that may impact how or when genome edited products may trigger regulatory oversight, with examples from various countries.

**Path to commercialization for genome editing crops:** Addressing considerations of environmental and food safety for broad categories of genome edited plants (SDN1, SDN2 and SDN3). Exploring issues related to commercial release of genome edited plants, such as stewardship, trade, and regulatory and policy harmonization.

<b>Webinar 1</b> Genome Editing in Agriculture: Innovations for Sustainable Production and Food Systems	22 Sept 2020
<b>Webinar 2</b> Applications of Genome Editing in Agriculture: CGIAR Fo-cus on Crop Improvement	29 Sept 2020
<b>Webinar 3</b> Applications of Genome Editing in Agriculture: CGIAR Fo-cus on Livestock and Aquaculture	6 Oct 2020
<b>Webinar 4</b> Regulation and Genome Edited Plants	13 Oct 2020
<b>Webinar 5</b> Path to Commercialization for Genome Edited Crops	20 Oct 2020

<sup>1</sup> <https://www.cgiar.org/impact/one-cgiar/>

<sup>2</sup> <https://www.cgiar.org/excellence-breeding-platform/crops-to-end-hunger/>

<sup>3</sup> <https://excellenceinbreeding.org/>

<sup>4</sup> Genome editing is achieved using molecular biology techniques that facilitate precise, efficient, and targeted modifications at genomic loci. These techniques include zinc-finger nucleases (ZFNs), transcription activator-like effector nucleases (TALENs), and type II clustered regularly interspaced short palindromic repeat (CRISPR)/CRISPR-associated protein 9 (Cas9).

# One CGIAR Global Webinar Series-Agenda

## Genome Editing in Agriculture: Innovations for Sustainable Production and Food Systems

### Webinar 1

#### Genome Editing in Agriculture: Innovations for Sustainable Production and Food Systems

Proposed dates: Tuesday, September 22, 2020. 12:30 UTC

Topic <sup>1</sup>	Speaker	Time
Welcome and Context Setting	<b>Jacqueline d'Arros Hughes</b> <i>Director General, ICRISAT</i>	8'
Opening Address: Transforming Plant and Animal Breeding through One CGIAR	<b>Marco Ferroni, Ph.D.</b> <i>Chair, CGIAR System Board</i>	15'
Finding Solutions for Sustainable, Climate-resilient Development through Collaborative Research	<b>Claudia Sadoff, Ph.D.</b> <i>Managing Director, Research Delivery and Impact, CGIAR</i>	15'
Technology Innovation in Agriculture to Achieve the Sustainable Development Goals	<b>Robert Bertram, Ph.D.</b> <i>Chief Scientist, Bureau for Resilience and Food Security, USAID</i>	15'
New Breeding Techniques for Resilient Agriculture in Sub-Saharan Africa	<b>TBC</b>	15'
Genome Editing of Plants - A Step Change in Plant Breeding	<b>Neal Gutterson, Ph.D.</b> <i>CGIAR System Board, Senior Vice President and Chief Technology Officer Corteva (retired)</i>	15'
Accelerating Technology Discovery through Effective Partnerships	<b>Renee Lafitte, Ph.D.</b> <i>Deputy Director, Crop R&amp;D, Bill &amp; Melinda Gates Foundation</i>	15'
Panel Discussion Audience Q&A	<b>All Speakers</b> <b>Moderator: Marco Ferroni</b>	40'

<sup>1</sup> Topics are provisional, with presentation titles to be confirmed.

### Webinar 2

#### Applications of Genome Editing in Agriculture: CGIAR Focus on Crop Improvement

Proposed dates: Tuesday, September 29, 2020. 12:30 UTC

Topic <sup>1</sup>	Speaker	Time
Achieving Genetic Gains through Advanced Breeding Technologies	<b>Michael Quinn, Ph.D.</b> <i>Platform Leader, Excellence in Breeding Platform</i>	20'
State of the Science: Wheat and Maize	<b>Zhengyu Wen, Ph.D.</b> and <b>Kanwarpal S. Dhugga, Ph.D.</b> <i>Applied Biotechnology Laboratory, CIMMYT</i>	10'
State of the Science: Rice	<b>Inez H Slamet-Loedin, Ph.D.</b> <i>Cluster Lead-Trait and Genome Engineering, IRRI</i>	15'
State of the Science: Legumes and Dryland Cereals	<b>Pooja Bhatnagar-Mathur, Ph.D.</b> <i>Principal Scientist and Theme Leader-Cell, Molecular Biology and Genetic Engineering, ICRISAT</i>	15'
State of the Science: Root and Tuber Crops	<b>Leena Tripathi, Ph.D.</b> <i>Principal Scientist and Deputy Director, East Africa Hub, IITA</i>	15'
State of the Science: Cocoa	<b>Paul Chavarriaga, Ph.D.</b> <i>Leader Platform for Advanced Breeding, CIAT</i>	10'
Panel Discussion Audience Q&A	<b>All Speakers</b> <b>Moderator: Marc Ghislain, Ph.D.</b> <i>Global Program Leader, Genomics &amp; Biotechnology, CIP</i>	30'

<sup>1</sup> Topics are provisional, with presentation titles to be confirmed.

### Webinar 3

#### Applications of Genome Editing in Agriculture: CGIAR Focus on Livestock and Aquaculture

Proposed dates: Tuesday, October 6, 2020. 12:30 UTC

Topic <sup>1</sup>	Speaker	Time
Introduction: Innovations in Livestock Breeding for Improved Productivity, Health and Welfare	<b>Steve Kemp, Ph.D.</b> <i>Program Leader, Livestock Genetics, ILRI</i>	5'
State of the Science: Livestock	<b>Mike McGrew, Ph.D.</b> <i>Group Leader, Roslin Institute, UK</i>	15'
State of the Science: Veterinary Vaccines	<b>Lucilla Steinaa, Ph.D.</b> <i>Principal Scientist, ILRI</i>	15'
The Policy Environment around Genome Edited Animal Products	<b>Diane Wray-Cahen, Ph.D.</b> <i>Senior Science Advisor, Foreign Agricultural Service, USDA</i>	15'
State of the Science: Aquaculture	<b>Ross Houston, PhD.</b> <i>Chair of Aquaculture Genetics The Roslin Institute</i>	
Path to Commercialization for Genome Edited Animals	<b>Tad Sonstegard, Ph.D.</b> <i>President &amp; CEO, Acceligen, USA</i>	15'
Panel Discussion Audience Q&A	<b>All Speakers</b> <b>Moderator: Steve Kemp, PhD.</b> <i>Program Leader, Livestock Genetics, ILRI</i>	40'

<sup>1</sup> Topics are provisional, with presentation titles to be confirmed.

## Webinar 4

### Regulation and Genome Edited Plants

Proposed dates: Tuesday, October 13, 2020. 12:30 UTC

Topic <sup>1</sup>	Speaker	Time
Regulation of Plants in Agriculture – Understanding the Context	<b>Donald MacKenzie, Ph.D.</b> <i>Executive Director, Institute for International Crop Improvement, Donald Danforth Plant Science Center, USA</i>	15'
SDN1, SDN2 and SDN3 Plants: One Size Does Not Fit All	<b>Agnès Ricroch, Ph.D.</b> <i>Senior Lecturer, AgroParisTech, France</i>	15'
Country Case Study: Argentina	<b>Augustina Whelan, M.Sc.</b> <i>Biotechnology Directorate, MAGYP, Argentina</i>	10'
Country Case Study: India	<b>Vibha Ahuja, Ph.D.</b> <i>Biotech Consortium India Limited, India</i>	10'
Country Case Study: Kenya	<b>Dorington Ogoyi, Ph.D.</b> <i>CEO, National Biosafety Authority, Kenya</i>	10'
Country Case Study: Philippines	<b>Flerida Carino, Ph.D.</b> <i>Department of Science &amp; Technology Biosafety Committee, Philippines</i>	10'
Panel Discussion Audience Q&A	<b>All Speakers</b> <b>Moderator: Leena Tripathi, Ph.D.</b> <i>Principal Scientist and Deputy Director, Eastern Africa Hub, IITA</i>	45'

<sup>1</sup>Topics are provisional, with presentation titles to be confirmed.

## Webinar 5

### Path to Commercialization for Genome Edited Crops

Proposed dates: Tuesday, October 20, 2020. 12:30 UTC

Topic <sup>1</sup>	Speaker	Time
Bringing Innovative Technologies to the Farmer from Public Sector Breeding Programs	<b>Trilochan Mohapatra, Ph.D.</b> <i>Director General, Indian Council of Agricultural Research</i>	10'
Creating an Enabling Policy Environment for Genome Editing in Agriculture	<b>Mark Rosegrant, Ph.D.</b> <i>Emeritus Fellow, IFPRI</i>	20'
What's Happening Internationally? Status Update from the OECD	<b>Peter Thygesen, Ph.D.</b> <i>Chief Regulatory Scientist, Office of the Gene Technology Regulator, Australia and Chair, OECD Working Group on Harmonization of Regulatory Oversight in Biotechnology</i>	15'
Status Update from the Cartagena Protocol	<b>Sarah Lukie, JD</b> <i>Managing Director, Regulatory and Multilateral Affairs for Plant Biotechnology, CropLife International, USA</i>	15'
The Importance of Regulatory Harmonization to Facilitate Research, Deployment and Trade of Genome-Edited Plants	<b>Morven A. McLean, Ph.D.</b> <i>CEO, Agriculture &amp; Food Systems Institute</i>	15'
Genome Edited Plants in Commerce: Ensuring Seed Quality and Identity	<b>Fan-Li Chou, Ph.D.</b> <i>Vice President, Scientific Affairs and Policy, American Seed Trade Association</i>	15'
Panel Discussion Audience Q&A	<b>All Speakers</b> <b>Moderator: Kiran K. Sharma, Ph.D.</b> <i>Deputy Director General -Research, ICRISAT</i>	30'

<sup>1</sup>Topics are provisional, with presentation titles to be confirmed.



For Further Information and Webinar Registration  
**Contact:**

**Pooja Bhatnagar-Mathur**  
*Principal Scientist & Theme Leader, ICRISAT*  
email: [p.bhatnagar@cgiar.org](mailto:p.bhatnagar@cgiar.org)  
[www.icrisat@cgiar.org](http://www.icrisat@cgiar.org)



Alliance

